

von Berg (S.)

KUMYS.

EXTRACTS

FROM

THERAPEUTICAL AND BALNEOLOGICAL WORKS,

AND FROM THE

LECTURES OF PROMINENT PROFESSORS.

COMPILED BY

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INTRODUCTORY REMARKS.

IT would be like "carrying coals to New Castle" were I to attempt to throw new light on the subject of kumys as a remedy; for the progress of medical science in America has of late years been so great that I presume there is scarcely a physician in this country who has not paid some attention to its merits, despite the fact that it has found as yet scarcely any practical application here. For this reason I have only ventured to present in the following pages a selection of truthful extracts from scientific works and from the lectures of renowned professors; placing in a convenient form much that has never before been translated into English, partly with a view to establish more firmly the claims which recent results have won for kumys, but more especially for the purpose of calling attention to its importance as a means for combating certain diseases which are exceptionally prevalent in this country.

Without doubt the reason why kumys finds such a limited application here, is that it has not been possible until now to obtain the real article, prepared in a proper manner and not simply compounded from chemical ingredients; and it is easy to understand why the experiments which have been made with such preparations have all resulted in failure; for they were nothing more than solutions of sugar of milk and sodium bicarbonate, the value of which as a remedy must be considered doubtful to say the least. (See "Pharm. and Chem. Centralblatt," Prof. Nessler.)

Having myself lived for many years with those people with whom kumys is a staple article, and being perfectly familiar with their habits and manner of living, my wife too being a native of one of those countries where kumys is universally used, and being, as well as myself, thoroughly familiar with its manufacture, we have always, even in this country, prepared it in small quantities for our own use, and were induced a

short time since to furnish some of it for experimental treatment by a friend who is a physician. Since the experiments that have been made with it here have proven extremely successful, I feel incited to introduce it to the public, and embrace this opportunity to recommend it to the notice of American physicians.

It would afford me great satisfaction to be able to place a few trial bottles at the disposition of any physician who may wish to make experiments, and I shall esteem it a pleasure to receive applications having this object in view.

We make three numbered grades of kumys, viz: the *mild* (1), the *medium* (2), and the *strong* (3), and those who prescribe it are requested not to neglect to mention the *grade number*.

The kumys made by us is prepared in a natural way from pure cows' milk, fermented in strict accordance with the Russian manner, nothing else being used in its preparation except an expensive ferment which we obtain directly from the Russian Steppe. We are prepared to furnish kumys fresh daily, and patients can be supplied with that having any desired age, either daily or at intervals of two or three days.

It is my intention to establish a *Kumys Institution* as soon as circumstances will permit, and this establishment will be based on the Russian plan, with a system of treatment with kumys, and also with whey, under the direct supervision of competent medical assistance; but of this further notice will be given in due time.

For the present I beg leave to submit the following pages to the perusal of the medical public, and to recommend once more a trial of the kumys of our manufacture, for the successful introduction of which I depend almost entirely upon the kind assistance of the physicians of this vicinity.

Respectfully,

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KUMYS.

“AS early as the thirteenth century, it was found by Marco Polo that the Tartars or Scythians of the ancients, who wandered about with immense wagons, possessed a drink, (kumys), written *chuinis* or *chemius* in the Latin edition; in describing which, he said it was fermented milk, so prepared that it had the agreeable flavor of white wine. Rhazes also learned from some Turks that this fermented milk furthered the passage of the food which they ate, and softened under all circumstances the contents of the bowels.” (*Dr. W. Fleischmann.*)

“Kumys is milk which has gone into a condition of fermentation similar to that of spirits, or rather it is milk actually undergoing a process of fermentation, and differs from the milk-brandy of the Kalmucs, which is obtained by distilling fermented milk. Kumys is mostly made from mares' milk, but it is prepared equally well from cows' milk, and even other kinds of milk may be used in its production; for instance, it is prepared in Eauxbonnes from a mixture of asses' milk and cows' milk. Even in Russia, kumys is made purely from cows' milk, while in Salzbrunn they are obliged to use cows' milk in its production, as mares' milk cannot be obtained there even at a high price, being only available when the foal happens to perish. In Geestemünde, kumys is manufactured from goats' milk.” (*Prof. Liebig.*)

“The distinction between kumys and fresh milk is, that in the former a portion of the sugar of milk is converted into alcohol and carbonic acid, while another part of it is transformed into saccharine acid, and that the caseous and fatty matter is no longer retained in solution, but is held suspended in the form of curdled particles.

"The presence of a combination of albuminous and other animal matter in kumys, together with alcohol, carbonic and lactic acids, such as is not found in any other beverage, afforded ample *a priori* reasons for believing that it would prove a most valuable and efficacious dietetic remedy for many cases of weakness and illness, and this hope has been most emphatically confirmed by the results which have been produced by actual treatment with it." (*With, Sr.*)

"In addition to water and alcohol, kumys contains an abundance of carbonic acid, and its beneficial effect is ascribed principally to the presence of these constituents, but partly also to that of vegetable acids, and of saccharine matter left undecomposed.

"Its composition is analogous to that of beer made with little or no hops, and its operation upon the physiological functions of the human system is quite similar. It appears that the effect of the alcohol is, to a great extent, neutralized, or rather diverted by the carbonic acid, yet this explanation, advanced by Giacomini, is not entirely satisfactory.

"Without seeking further to trace the effects produced by kumys back to those which might be expected from its chemical constituents, suffice it to call attention to the fact that a great variety of qualities may be produced by resorting to different modes of preparation, and its properties even vary with its age; so that the slight variations noticeable in the mode in which this beverage operates may easily be accounted for." (*Dr. Lersch.*)

"Despite the popularity of kumys in Russia as a remedy for consumption, and although physicians of the highest scientific rank have made numerous observations upon the effects produced by it, and that, too, with the most flattering results, the erroneously preconceived opinion that a kumys really possessing sanative virtues can only be obtained in Russia—in fact, only in the Russian Steppe—prevails not only among unprofessional people, but is also held by many physicians; and thousands of suffering people make yearly pilgrimages thither, often coming from distances of many hundreds of miles, in order to subject themselves to a cure in which they place the most implicit faith.

"Dr. Stahlberg, induced by the conviction that although a peculiar kind of fodder and a particular climate might well have an influence upon the amount of milk secreted, it could in no way materially change its chemical composition, which he considered dependent solely upon the breed, the manner of subsisting, and the internal characteristics of the animals, first sought to oppose this prevailing prejudice. He erected successively in Moscow, St. Petersburg, and lastly in Vienna, kumys establishments, and shrank before no sacrifice necessary in order to furnish these institutions with the appurtenances requisite to the demands of science, and to adapt them completely to the wants of his patients. Since then he has published yearly reports in which the results obtained are brilliantly portrayed. He also procured quantitative analyses of Russian kumys from Hartier, of Moscow, and made use of these in establishing a scientific definition of the physiological effects of kumys; and, thoroughly convinced of the immense value which must be ascribed to it as a dietetic remedy for consumption, wasting maladies of every kind, diseases of the blood, anæmia, and for scurvy in particular, he feels certain that this great remedy, which seems to have so long remained a kind of national property in Russia, will soon force its way into universal application." (*Biel.*)

With the nomadic tribes of the Samara and Orenburg governments, most of which are Baschkirs and Kirghizians, kumys is one of the principal articles of food, especially in summer. For these people kumys serves as food and drink, and they subsist almost exclusively thereon.

Kumys is, when in a partially fermented state, a most agreeable beverage, slightly acid and highly capable of slaking thirst. It requires no effort to learn to enjoy drinking it; on the contrary, people very easily become fond of it. In connection with this subject Dahl says: "When a person has become accustomed to drinking kumys he involuntarily prefers it to all other beverages without exception; especially during warm weather. It is a cooling drink, which temporarily satisfies both hunger and thirst, imparting strength to the system. But people should not drink it from deep champagne glasses or sip it slowly; it must be imbibed rapidly, when one is thirsty, and swallowed at one continuous draught. While it tempers hunger it does not remove it entirely; so that a person can eat plentifully, or get along almost without eating if he prefers to do so. A remarkable peculiarity of kumys, and one which is not easily explained, consists in the fact, for the truth of which I am willing to be held responsible, that it will never overload or incommode the stomach."

Prof. Lersch also remarks on this point, that it is surprising what an amount of kumys a person can drink ; and that people who habitually drink very little, can swallow down glass after glass of it, the very smallest allowance being two bottles a day, while from five to eight bottles are considered an ordinary amount, and some people even drink as many as sixteen bottles a day.

Dahl says : " A person may at any time drink any amount he wishes to, without experiencing the slightest inconvenience. If one were to drink half as much water, or *kwas*, after a long walk or other fatigue, he would certainly feel distressed, and would be obliged to lie down, while kumys invigorates and enlivens instead. It is actually impossible to become intoxicated from drinking kumys, although it will sometimes put people in a jolly mood ; especially the kumys made in autumn, which is generally stronger than that made at any other season of the year. A little mirthfulness, a rosy face, and then a quiet sleep—that is all. Headache is never a consequence."

Ucke gives the following description of the effects produced by kumys upon the nervous system : " Those who habitually drink a great amount of it remain almost constantly in a state of mild intoxication, which, although it renders them temporarily unfit to perform mental labor, does not by any means approach a state of stupidity. A desire to sleep manifests itself, to grant which can only be productive of good. Persons who, happening to be in the lonely steppes, have resolved to read a great deal and write often to absent friends in order to pass the time, have invariably been known to fail in keeping their resolutions ; for there it is drink and sleep, take a short walk, and then drink and sleep again. But with all this there is neither headache nor other unpleasant sensation, and no injurious effects take place afterward."

The effect of kumys on the arterial system—pulse, temperature of the body, etc.—is comparatively slight. Ucke declares that he could not observe any alteration in the respiration or in the beating of the heart ; but Bogojawlensky tells us that when the subject is in the state, produced by kumys, a redness of the face, and under certain circumstances, an increased beating of the heart may be noticed.

According to Maydell it has been observed that with those who drink a very great deal of kumys, subsisting almost entirely thereon, the face becomes red, the skin sweaty, the pulse accelerated and full, and that a great inclination to sleep is felt ; so that a considerable amount of exercise is advisable, in order to avoid too great an accumulation of blood. These phenomena of heightened arterial action were often observed during a whole month after the treatment had been begun.

Exercise and warmth, he says, tend to further the removal of the carbonic acid and of the alcohol and its products of combustion; they are therefore means which enable one to consume great quantities of kumys without difficulty; and it is remarked by Ucke that it is by resorting thereto that seven or eight, and even sixteen bottles per day, may be drunk without producing any bloating or giving rise to any other inconvenience.

"The ease with which great quantities of kumys may be taken into the stomach depends of course upon the nature of its chemical constituents, and particular account must be taken of the immense proportion of carbonic acid which it contains; yet it is to the warmth of the climate, which furthers evaporation, that this phenomenon must be in a great measure ascribed. Those who partake of kumys plentifully are therefore in a constant state of mild perspiration, emitting no inconsiderable amount of gaseous evaporation; and when the climate aids in keeping up this condition, they are able to consume so much the greater quantity of it. In fact, this is only possible when the weather is warm, and a person can never drink such great amounts of kumys in cold weather; if he persists, however, he will soon notice insufficient secretion, so that, as the slight amount of evaporation through the skin is not adequately supplemented by the action of the urinary organs, these disagreeable circumstances often culminate in diarrhœa." (*Prof. Löschner.*)

In describing the effect produced upon the stomach and alimentary canal, authorities are somewhat at variance. According to Chomenkoff, no bad results whatever will be produced in the abdominal passage, even when the digestion is in very much weakened condition, and even when very great amounts are taken; in his experience no one ever complained of being bloated or of heaviness in the stomach.

According to Maydell, the manner in which kumys affects the bowels varies—setting aside the influence due to the temperature of the air—with the stage of fermentation which the kumys has reached. Fresh kumys operates as a mild laxative, and kumys which has already become a very little sour has a slight tendency in the same direction, while that which has reached a pronounced stage of acidity, though not yet unpleasant to the taste, loses this laxative quality. On the other hand, kumys which has reached a degree of sourness bordering on bitterness produces an effect directly opposite to that of new kumys, having become constipating in its tendency, and inducing a state of affairs which sometimes terminates in diarrhœa. Yet kumys does not possess this latter potency in any marked

degree, and the effect must be ascribed rather to the aid of chronic tendencies already inherent in the patient than to the independent action of the drink itself; a fresh case of diarrhoea resulting from a cold cannot be checked by it.

This same writer, who has had frequent opportunities for making observations, having himself had charge of kumys establishments, remarks in another place that many patients experienced, at the beginning of the treatment, occasional periods of constipation which it became necessary to remove by doses of salts; but that it was only necessary to treat this constipation during the first two weeks, as it finally found spontaneous relief, thus rendering the use of physic superfluous.

Authorities unite in stating that, during the treatment, the dejecta are found to diminish in amount, while the reverse is true with reference to the quantity of urine.

Quoting Dahl: "I can affirm with absolute certainty that the excretions, with respect to the bowels, diminish in quantity. The very first thing noticed with a person who begins drinking kumys is a constipation which manifests itself from the first day onward, but which is by no means grievous, and which does not even impair the appetite. This disorder soon regulates itself, and that too, without any profuseness in the evacuations." * * * * *

"The urine is somewhat roily, depositing a white sediment; and, although the amount of urine is considerable, it is by no means so in comparison with the quantity of kumys imbibed. If one were to drink twenty or more cups of tea or glasses of wine or 'kwas,' it would augment the amount of urine in a far greater degree than would an equal quantity of kumys."

Neftel, too, calls attention to the fact that where kumys is used almost exclusively—usually together with mutton—the dejecta become very sparing. He further states that the quantity of urine is increased, as does also Chomenkoff, who adds that it becomes paler and does not emit the usual odor; while Maydell remarks that kumys operates on the kidneys, rendering it necessary to make water frequently.

The amount of evaporation through the skin depends to some extent upon the constitution of the subject, the temperature, etc. Dahl maintains that kumys promotes the action of the skin; Ucke, too, says that it furthers perspiration gently. Chomenkoff says: "Evaporation through the skin is increased by drinking kumys, and yet the patient feels that his forces are refreshed by it."

Scanzoni remarks: "Milk which has become only slightly sour occasions agitation and rumbling in the bowels, bringing

on light diarrhoea—disturbances which soon abate when a more fermented grade is drunk; the urine becomes watery and more abundant, and if the doses are heavy, perspiration increases; if lighter, though not small, the pulsations diminish—especially a few hours afterward, and even though the contrary effect would otherwise be expected during digestion."

According to Chomenkoff, an evident change is produced in the venous blood of cachectic and scorbutic persons who undergo treatment with kumys; it becomes less limpid, more fibrinous, and more highly colored.

It is usually observed that kumys causes an increased deposit of fatty matter in the sub-cutaneous areolar tissue, which is often a source of some astonishment. With reference to this fact the authorities agree pretty well with each other. Dahl says, in regard to it: "The bony faces of the nomadic tribes who had grown excessively lean during the course of the winter, became so plump and fleshy in a few weeks at the return of spring, that one could not possibly recognize his old acquaintances among them. I doubt the possibility of devising any other food which would in any respect replace kumys, and which would here answer to the wants created during the winter by long fasting, with the leanness which invariably follows it."

With respect to this subject, Ucke writes as follows:

"The power which kumys possesses of fattening in the short space of from two to four weeks is remarkable, and I know of no other substance which will bear comparison with it for this purpose. People who, upon entering the course of treatment, presented the appearance of mere shadows, consisting of nothing but skin and bone, were so admirably furnished with a comfortable coating of flesh in a short time, that they returned looking so healthy that nothing remained to remind one of their former wasted aspect. Others, less deplorably lean upon their arrival, leave with plump faces which look as if the shining skin were stretched upon their cheeks by the pressure underneath it. The rounded parts of the body seem to grow plump at the expense of symmetry. When, however, such persons take kumys a second year, no such surprising change is noticed; the quantitative augmentation appears to be better controlled and participated in by the muscular and sinewy parts; symmetry is no longer sacrificed, and it would seem that the body, having been better prepared to receive the drink, no longer succumbs to its influence in the same passive manner. This depositing of fatness depends also, to a great extent, upon the weather, and does not by any means attain the same degree of importance in cool summers that it does in warm ones."

"The alcohol which kumys contains," says Liebig, "must certainly assist in promoting a deposit of fatty matter; inasmuch as it shields the fat from oxydation, being itself oxydized instead. Then, too, a part of the sugar contained in whey and in kumys contributes also to the production of fat."

In praise of kumys, Medical Counsellor Fisher states that it is, above all, a remedy which *restores*, and which, in cases of convalescent weakness, marasmus, nervous weakness, chlorosis, scurvy, dyscrasia and dyspepsia, emphatically merits the full measure of the praises which are so justly heaped upon it; and Chomenkoff, no less enchanted by the results which kumys has enabled him to produce, gives expression to the following encomium:

"In the outward appearance of the patient who has begun to drink kumys, an agreeable change is manifested, and this improvement is enhanced by continuing to use it for several weeks longer. The body, which had previously been lean and wasted, begins to fill up; the skin, which had been dry—and parchment-like in some cases—becomes softer and somewhat moister, attaining a much more healthy appearance; and plumpness and freshness, with that expression peculiar to health, are shown in the face. Without exception, and particularly with young people, the writer has observed these results of the beneficial effect of kumys upon all those who suffered from nervous degeneration, or—if I may be allowed the expression—*cachexia innominata*, and whose ailings were characterized by excessive leanness of the body, lassitude, inertia, by paleness in the face and irregularity of appetite, and by variableness in the humor or disposition, without showing signs of any single positive disease."

The curative effect of kumys extends, as Ucke maintains, to the various mucous membranes, acting especially upon the bronchial tubes, and it is doubtless to this fact that its remarkable restoring power should be ascribed.

"It is not to the acute catarrhs, but to the chronic ones—though they may have existed for years—that kumys slowly, yet none the less certainly, brings relief; and it matters not what may be the character of the erethism or torpidity of the case. Its healing influence upon bronchial catarrhs is best known, and its commonest and most wide-spread application is to this ailment. The course which the cure pursues is characterized by a gradual diminution of all the symptoms—cough, sputa, difficulty in breathing, etc. When, however, the catarrh has been one of long standing, an insignificant cough, and perhaps a slight ejection of phlegm will remain at the end of the first season; but it is seldom that the last traces of

these symptoms do not disappear upon resorting to the cure a second summer." (*Schnepp*.)

The nutritive qualities of kumys, together with its beneficial effect upon catarrhs, have gained for it no ordinary fame as a remedy for affections of the lungs; and it is particularly for consumption that the numerous sufferers travel to the Kirghizian Steppe for the purpose of being able to partake of this beverage; since, as Nestel asserts, the diseases of scrofula, cachexy, rhachitis, and tubercular consumption are unknown among the Kirghizians.

Rokitanski, in regard to this subject, says: "The Kirghizians, a nomadic people inhabiting the Steppe, and belonging to the Mongolian race, are of strong and often athletic constitution, with muscular bodies and the thorax well developed. They are invariably of dark complexion, with black hair, black eyes and sound white teeth. They pass their whole lives in the open air, riding on horseback much of the time, and dwelling both in winter and summer in tents which they call *kubitka*. Their food is extremely simple, and consists almost exclusively of meat, principally mutton and horse flesh; in addition to this they prepare a drink which has a slightly intoxicating effect, and which is known by the name of kumys; the richer families in particular indulge in this beverage to a fabulous extent. With regard to the forms of disease to which these nomadic people are subject, they know nothing of the maladies of scrofula and rhachitis; and what is still more remarkable, I did not find occasion to notice a single case of tubercular consumption among them, although I sought diligently while in that country for cases of this latter disease. During my excursion, I had occasion to meet hundreds of Kirghizians daily, many of whom I myself examined, and if this disease had any existence among them, I should certainly have noticed it."

Chomenkoff says that in cases of organic disease of the lungs kumys has a good effect, but that it is only palliative. Dahl is of the opinion that it can never radically cure consumption when it has reached an advanced stage, but that it will most certainly remove a condition of aptness to consumptive dangers. Bogojawlensky believes, however, that he owes it to the use of kumys that he was himself rescued from the clutches of an already advanced stage of consumption. "Fresh air, exercise and kumys," says Maydell, "are agents which have often restored life and health to patients that I have found dying before my eyes."

After giving a description of two accurately-observed cases of consumption, in one of which a temporary recovery at least

was produced, although cavities had already been formed, and in the other of which a permanent cure was effected, Nefel concludes by saying: "I will not linger to describe other cases of this kind which have frequently come under my observation, but will simply remark that the use of kumys, particularly at the beginning of tubercular attacks, has proved to be extremely beneficial."

The following is taken from *Kochler's Referat*:

"H. G. Schulz, of Reval, made a report many years ago upon a case in which a consumptive person whose recovery had been despaired of was entirely restored by treatment with kumys, as Merkel of Riga, had previously recommended it highly as a remedy for catarrhal consumption.

"Schnepf's therapeutical experience with kumys is based upon six cases of tubercular consumption, four of which were affected with infiltration of the apices of the lungs, leanness, and intermittent fever, while in the others, cavities had made their appearance, and the patients were also reduced to a state of extreme emaciation. With the former, the initial amount of kumys prescribed (one bottle a day) was gradually increased to three bottles; with the latter it was raised to five bottles. The small doses given in the first instances brought about, under the stated conditions, a decided decrease of thirst, less frequent pulsations, and an abatement of the fever with its exacerbations; the cough rapidly became lighter, and the ejections were rendered more easy; both decreased more and more until they almost entirely ceased; at the same time the air penetrated into more and more of the cells in the lungs, and their vital capacity was increased; the patients increased in weight and became more fleshy, while the night-sweats disappeared entirely. With the few who were affected with softening of the tubercular deposit, Schnepf met with comparatively greater success. The mild intoxication caused by the heavy doses brought on sleep, which tended of itself to bring about a restoration of the normal condition of nutrition. The amount of kumys taken by the patients did not at any time exceed five bottles per day."

"In kumys establishments three grades of kumys are prescribed: (1) *mild*, or one day kumys, (2) *medium*, or from two to three day kumys, (3) *strong*, or from five to seven day kumys. The first two grades tend to loosen the bowels, while the *strong* grade has a binding tendency. Kumys which has been kept for several days in a warm room is very strong and sour, and will, if imbibed, create an antipathy against the further use of kumys; if kept in a warm place for a still longer time, its effect is sickening, and will produce diarrhœa.

"In opening a bottle of kumys care should be taken lest the greater part waste by being driven out in foam by the gas which it contains. Kumys has a pleasant, rich taste, somewhat 'sour-sweet,' and causes a slightly irritating sensation in the nose, similar to that felt after drinking champagne. The flavor of kumys is peculiar to itself, and its aroma is especially noticeable before and after drinking. Patients very soon begin to like the taste of kumys, and they afterwards prefer it to all other beverages without exception. If small quantities are taken the appetite is increased, and when greater amounts are drunk the desire for solid food ceases entirely, so that in this way patients may subsist for weeks without any other form of nutriment.

"A peculiarity of kumys is, that it never overloads or incommodates the stomach, and that it maintains an agreeable warmth in the stomach which is felt throughout the body; its first effects soon vanish and give way to somnolency, so that patients do not have the slightest desire to busy themselves with anything, and do not at all crave the necessary promenades. Stahlberg calls attention to a remarkable phenomenon which is noticeable after drinking kumys; it is the sensation of dryness in the mouth and the increased thirst, which is especially felt when the kumys is strong, and which may be attributed to the diminished amount of secretion by the mucous membranes." (*Biel*.)

"All those who have made reports upon the nature and effects of kumys agree in stating that it causes an increased deposit of fat—that spare people become more comfortable and better-looking by using it—and, finally, that in all cases of convalescence, especially after severe maladies, kumys has a most valuable effect as a restorative. Its greatest fame, however, rests—and not without reason—upon its beneficial action in cases of affections of the breast and lungs. Chronic bronchial catarrhs, of however long standing, are, according to all the results hitherto brought together, slowly it is true, but none the less surely, cured by it; while those ailments which are analogous to the diseases of the chest are almost invariably removed by it; at any rate, patients who undergo treatment with kumys while they are yet in the early stages of such diseases, experience results which are truly surprising. The further the disease has advanced, the more uncertain will be the effect of the treatment; yet even in cases of protracted duration kumys is of incalculable value as a palliative agent, and though it may not suffice to restore the impaired lung or heal the diseased tubercle, it is always potent in paving the way to a recovery; and, when even this fails, it prolongs at least the life of the patient." (*Fleischmann*.)

"Catarrhs, as soon as they bear no inflammatory character, are rapidly and easily cured by kumys; and even fresh affections of the mucous coat of the bronchi and stomach, which are primarily attended with a slight amount of fever, not only admit of treatment with kumys, but are, according to practical results, rapidly cured by it. But in treating chronic catarrhs of the mucous coat of the respiratory organs, those wide-spread enemies of the human race, with all the disturbances in digestion and the legion of nutritional ailments which follow in their train, kumys appears to possess an efficacy which may be justly called specific. It is particularly its nutritive and blood-purifying effect which here comes to the front and promises especial prominence for it as a remedy for all those conditions of weakness which result from imperfect nutrition and incomplete mixture of the arterial with the venous blood, and hence in particular for consumption, chlorosis and *diabetes mellitus*. Besides, kumys is a most excellent dietetic remedy during convalescence, and is to be recommended for final treatment after mineral water cures, in order to prolong their operation and clinch their effect." (*Holsboer*.)

"The amount of kumys administered in the Steppe is very great. In the German, French, and Swiss establishments, it is of course much less. A person who drinks kumys for curative purposes must also conform as far as possible to the Kirghizian manner of living. The proper diet is mutton and bread. According to Dahl, wine, coffee and tea are not to be recommended. Pastry and sour food render kumys unpleasant to the taste. To determine upon the diet which will best suit a given case is a matter which must, however, be left to the discretion of the attending physician." (*Lersch*.)

Haeberlein, who managed to produce a cicatrization of the ulcers in his lungs by using kumys, thus getting rid of an advanced case of purulent phthisis without incurring hectic fever or other casualties, commends its use with so much enthusiasm that one cannot help feeling encouraged to make further experiments, upon the strength, too, of the success which he claims to have met with in applying it to all forms of phthisis, atrophy and exhaustion from internal or external ulceration. After stating the method of administering kumys, and remarking that the breakfast should consist of meat broth and white bread, the dinner of a good, strong soup, made with meat and vegetables, he advises particularly the exclusive use of animal food.

"The following will suffice as general hints with reference to the amount of kumys that should be administered, and the manner in which it should be taken.

"If the object be to cure a catarrh it is better to drink small quantities at frequent intervals, but in combating leanness larger amounts should be imbibed, which, be it remarked, will, with but few exceptions, find a ready welcome in the stomach and agree well with the patient. In general, let the desire of the patient have ample weight in deciding as to the quantity which ought to be given; but the minimum should not be less than two and a half pounds per day. If the drink agrees well with the patient, and if he feels no inconvenience from drinking—no bloating—the daily amount may be increased to four or five pounds, and even still higher here and there. Should diarrhœa set in at the beginning, it is well to add small quantities of carbonate of lime (pulverized chalk), but if, on the contrary, a constipating tendency is noticed at any time, it may best be diverted by adding a little magnesia. We call special attention to this, because these two salts have, when taken with lactic acid, a most beneficial effect upon the mucous membranes of the stomach and lower bowel.

"As kumys, when it is taken in small doses, promotes digestion and increases the appetite, it is obvious that a nourishing diet in combination with it will agree well with the stomach, unless the special conditions of a particular case impose a restriction. Of course the requirements of such special cases must be subjected to the discretion of the conducting physician at the kumys establishment, as both the idiosyncrasies of the subject and the peculiar features of the disease often render certain modifications not only advisable, but necessary.

"We must not fail to call attention to the fact that kumys makes an excellent habitual beverage, inasmuch as it slakes the thirst and has the advantage over all other beverages of its kind, in imparting—by dint of its continued, gentle influence—strength to the blood and nervous system, without entailing subsequent exhaustion.

"Bottled kumys should be kept in a cool cellar until it is wanted for immediate use. Before opening a bottle it should be well shaken in order to mix the settled caseous particles thoroughly with the liquid." (*Swiss Kumys Institute*.)

The following report, made by *Dr. Ebermann* upon a case of consumption, will serve as a sample:

"Patient 'C. K.'; 29 years old; body weakly built; married since April 29, this year; went through a one-sided pneumonia five years ago; often subject to spitting blood, (especially bad in January last); suffering for a year back with cough and short breath; often feels faint; after going up stairs, fast walking, etc., violent beating of the heart and short breath. Has felt feverish with frequent chills toward evening for some time past, with temperature raised to over 100°

Fahr. Often restless in the night, with coughing spells and sweating; suffers from loss of appetite, but no diarrhoea.

"By applying percussion a dull tone was heard *in regione subclavia dextra*, more *ad sterunm*; the same *in regione supra-spinata dextra* and at the upper half of the right interior border of the scapula.

"Auscultation over the points of dullness revealed bronchial respiration, dispersed sonorous rhonchi in both lungs, and indefinite breathing in the upper and forward half of the left lung.

"Began treatment with kumys on the 11th of July, giving one bottle a day at first, which amount was gradually increased to eight bottles. On the twenty-second day of treatment the thermometric curve had fallen to its previous altitude (between $98\frac{1}{2}^{\circ}$ and 99°) and remained nearly constant for seventeen days. On the fortieth day of treatment the temperature began rising in consequence of a cold, reaching $100\frac{1}{2}^{\circ}$ three days later, and sinking to its normal height again on the seventh day after the cold had been taken, *i. e.*, on the forty-seventh day of treatment, after which time no more fever appeared.

"On the third day after the patient had begun drinking kumys, when the daily amount was two and a half bottles, the diurnal urine became neutral, and remained so until the end of the cure.

"With respect to the subjective and objective symptoms, the following were noticed during the course of the treatment.

"When the daily amount had reached five bottles, the patient breathed more freely and suffered less from cough. In contrast with his previous hypochondriacal and irritable disposition, he became quite cheerful and preserved an excellent humor. After drinking two bottles in the morning he felt a great inclination to sleep at about noon. Upon awaking he felt refreshed and strengthened, instead of being drowsy and exhausted as was formerly the case.

"Finally the night-sweats cease, the patient sleeps soundly at night, and his rest is seldom disturbed by coughing. His eyes, which were formerly dull, begin to get brilliant; his tread becomes more elastic; he feels perfectly well, but he still shows no inclination to work during the treatment.

"The rhonchi all disappeared when the patient had half completed the cure; the sound emitted in breathing became clearer, but the solidified places in the right lung remain as they were."

An elaborate table, containing full data with reference to the variations in the pulse, temperature, urinary secretions, weight of the patient, etc., etc., etc., has here been left out; but this, as well as other interesting tables and reports like the preceding one, will be gladly submitted at any time to the inspection of those interested.

Respectfully,

S. VON BERG, PH. D.

